

ABSTRACT

The present invention is a method and an apparatus for identifying and quantifying components in an effluent stream from an ammonoxidation reactor, the apparatus comprising a microprocessor; and a Fourier Transform infrared spectrometer having a sample cell through which may flow a portion of the effluent stream, an infrared source to emit infrared radiation and pass the infrared radiation through the effluent stream, an infrared detector to detect transmitted infrared radiation at the selected infrared wavelengths and to generate absorbance data due to absorbance of the infrared radiation by the components, wherein each of the components absorbs infrared radiation at one or more of the infrared wavelengths, and an output apparatus to provide the absorbance data to the microprocessor; wherein the microprocessor is programmed to identify and quantify each of the plurality of components based upon the absorbance data and calibration data, the calibration data being obtained from recovery run analyses and calibration analyses in the sample cell. The method may be applied to utilize the apparatus to provide real-time control of the operation of an ammonoxidation reactor, based on the analytical results obtained by the FT-IR spectrometer and the calibration model developed therefor.

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